

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): A method for mapping higher brain function to map a higher brain function while a body of a subject is in a resting state or in a predetermined active state, comprising

an fMRI mapping step to map a brain function of the subject by functional magnetic resonance imaging,

a headgear mounting step to mount the headgear having a predetermined marker on a head portion of the subject,

a head portion structural image acquisition step to acquire a head portion structural image of the subject having the mounted headgear by the magnetic resonance imaging ~~in a state that a headgear having a predetermined marker is mounted on the head portion of the subject,~~

a three-dimensional image combining step to create a three-dimensionally combined image showing the brain function and the head portion structure of the subject simultaneously by three-dimensionally combining the brain functional image obtained by the fMRI mapping step and the head portion structural image,

an optical probe mounting step to specify a position on the headgear where an optical probe that is used for near-infrared spectroscopy is mounted based on the three-dimensionally combined image and to mount the optical probe at the specified position, and

an NIRS measuring step to map the brain function of the subject by the near-infrared spectroscopy in a state that the headgear loaded with the optical probe is mounted on the head portion of the subject.

Claim 2 (previously presented): The method for mapping higher brain function described in claim 1 wherein during the optical probe mounting step, a marker corresponding to an activated portion of the brain determined based on the brain functional image included in the three-dimensionally combined image is specified from the markers on the headgear determined based on the head portion structural image included in the three-dimensionally combined image and an optical probe for irradiation of near-infrared light and an optical probe for detection of the near-

infrared light diffused from the brain are mounted in pairs near the specified marker on the headgear.

Claim 3 (previously presented): The method for mapping higher brain function described in claim 2 wherein the optical probe for irradiation and the optical probe for detection are arranged apart by a predetermined distance across a corresponding marker.

Claim 4 (currently amended): The method for mapping higher brain function described in claim 3 wherein a distance between the optical probe for irradiation and the optical probe for detection or a direction of arranging the optical probe for irradiation and the optical probe for detection is determined based on a shape of the activated portion of the brain, a physical ~~condition~~ position of the optical probes of the headgear, a positional relationship with other adjacent optical probe or a theoretical analysis result of brain optical propagation.

Claim 5 (currently amended): The method for mapping higher brain function described in claim 1 further comprising a headgear manufacturing step prior to the headgear mounting step, wherein ~~to manufacture the headgear and during the headgear manufacturing step the headgear for the subject's exclusive use tailored includes tailoring the headgear for exclusive use of to each subject is manufactured.~~

Claim 6 (previously presented): The method for mapping higher brain function described in claim 5 wherein during the headgear manufacturing step a plurality of the markers are evenly embedded at predetermined intervals into the headgear.

Claim 7 (currently amended): The method for mapping higher brain function described in claim 5 wherein during the headgear manufacturing step the head portion of the subject is covered with a flexible film ~~such as a kitchen wrap film~~, then a molding material is applied on the film in a flexible condition so as to make the headgear molded into a form of the head portion of the subject and the markers are embedded into the molding material before the molding material is cured.

Claims 8 -11 (Canceled)

Claim 12 (currently amended): The method for mapping higher brain function described in claim 2 further comprising a headgear manufacturing step prior to the headgear mounting step, wherein to manufacture the headgear and during the headgear manufacturing step the headgear for the subject's exclusive use tailored includes tailoring the headgear for the exclusive use of to each subject ~~is manufactured~~.

Claim 13 (currently amended): The method for mapping higher brain function described in claim 3 further comprising a headgear manufacturing step prior to the headgear mounting step, wherein to manufacture the headgear and during the headgear manufacturing step the headgear for the subject's exclusive use tailored includes tailoring the headgear for the exclusive use of to each subject ~~is manufactured~~.

Claim 14 (currently amended): The method for mapping higher brain function described in claim 4 further comprising a headgear manufacturing step prior to the headgear mounting step, wherein to manufacture the headgear and during the headgear manufacturing step the headgear for the subject's exclusive use tailored includes tailoring the headgear for the exclusive use of to each subject ~~is manufactured~~.

Claims 15-18 (Canceled)